

What is claimed is:

1. A continuously variable transmission apparatus having an input shaft, an output shaft, a toroidal-type continuously variable transmission unit, a gear-type differential unit in combination with a plurality of gears, and a control unit for controlling a change in transmission ratio of the toroidal-type continuously variable transmission unit, wherein  
10 the toroidal-type continuously variable transmission unit has;  
an input side disk rotatably driven by the input shaft,  
an output side disk supported coaxially with the input side disk and rotatably relative to the input side disk,  
15 a plurality of power rollers interposed between the input side disk and the output side disk,  
an input side rotation sensor for measuring a rotational speed of the input side disk, and  
20 an output side rotation sensor for measuring a rotational speed of the output side disk,  
wherein the differential unit has;  
a first input portion rotated together with the input  
25 side disk by the input shaft, and

a second input portion connected to the output side disk, whereby a rotation according to a difference in speed between the first and second input portions is taken to be transmitted to the output shaft, and

5 wherein the control unit regulates the transmission ratio of the toroidal-type continuously variable transmission unit so as to change relative speeds of the plurality of gears constituting the differential unit to thereby convert the rotational state of the output  
10 shaft to forward and backward rotations with a stationary state being interposed therebetween, with the input shaft being kept rotating in one direction, and to calculate a rotational speed of the output shaft based on a rotational speed of the input side disk obtained by the input side  
15 rotation sensor and a rotational speed of the output side disk obtained by the output side rotation sensor, and a gear ratio of the differential unit.

2. A continuously variable transmission apparatus  
20 as set forth in Claim 1, wherein the control unit further regulates a torque which passes through the toroidal-type continuously variable transmission unit to be transmitted to the output shaft according to the rotational speed of the output shaft so calculated by changing the  
25 transmission ratio of the toroidal-type continuously

variable transmission unit.